C·R·E·S®
CENTER FOR REPRODUCTION OF ENDANGERED SPECIES

REPORT
WINTER 1996

On the Road at Last: Paraguay's Giant Peccaries Come to Phoenix


Werner P. Heuschele, D.V.M., Ph.D.

A species that biologists thought no longer existed in the wild—the *taguá*, or Chacoan giant peccary *Catagonus wagneri*—finally arrived at the Phoenix Zoo on August 10, 1996. It was "rediscovered" alive and well by scientists in 1972, in the Gran Chaco of Paraguay.

By 1985, the threat to its survival became a concern to Dr. Kurt Benirschke, founding director of CRES, and he started Proyecto Taguá, a project to help conserve the species.

The steady destruction of native habitat made it clear that the preservation of this endangered species would depend on captive breeding, as well as a better knowledge of its biology. Dr. Benirschke then obtained a parcel of land in the middle of primary giant peccary habitat, the Paraguayan Chaco. The project was officially sanctioned by the Paraguayan Minister of Agriculture in an agreement signed in November 1986 with the Zoological Society of San Diego, the Foundation for Endangered Species, and the United States Peace Corps, which provided personnel to assist with the project's initial operation. By 1988, the first captive births occurred, and since then there have been more than 200 births at the site. Because of their reproductive success, some *taguás* have been released into native habitat, and now 66 remain at the facility. In 1989, Proyecto Taguá came under the direction of current CRES director Dr. Werner Heuschele.

The steady destruction of native habitat made it clear that the preservation of this endangered species would depend on captive breeding...

It took a bit more than four years for the Zoological Society of San Diego to finally obtain the necessary export permits and make all the transport and quarantine arrangements for the first-ever importation of giant peccaries into the United States. This delay was

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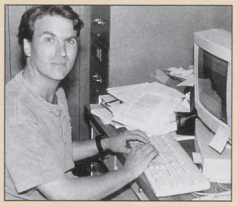

Werner P. Heuschele, D.V.M., Ph.D.

The Chacoan giant peccary in Paraguay now has a fighting chance for survival, thanks to Proyecto Taguá, a project initiated by Dr. Kurt Benirschke, founding CRES director, in 1985. More than 200 peccaries have been born at the site since 1988.

CRES® is operated by the Zoological Society of San Diego.



Painted Stork
New method for bird gender identification.
See page 3.



Dr. Ron Swaisgood
Postdoctoral Fellow in Behavior at CRES.
See page 4.



Adopt a Giant Panda!
Help us help endangered species.
See page 5.

On the Road at Last: Paraguay's Giant Peccaries Come to Phoenix

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Dennis Meritt, Ph.D.

Current CRES director Dr. Werner Heuschele (left) and founding director Dr. Kurt Benirschke (right) are on hand at the Phoenix Zoo for the arrival of the long-awaited giant peccaries.

It took a bit more than four years for the Zoological Society of San Diego to finally obtain the necessary export permits and make all the transport and quarantine arrangements...


Werner P. Heuschele, D.V.M., Ph.D.

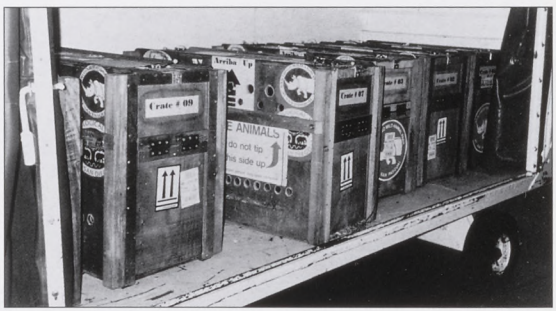
disappointing because the Phoenix Zoo, their ultimate destination, had obtained the United States Department of Interior import permits in 1994. And then the journey itself was a long one: on April 23, 1996, the animals flew via Buenos Aires and Frankfurt to their first destination, the USDA-approved quarantine facility near Warsaw, Poland, for a 60-day period. This was to protect against foreign animal diseases entering the United States and seriously affecting our livestock industry. After they passed their foreign quarantine, they were flown to New York City and then trucked to the USDA quarantine center in Newburgh, New York. Another 30-day period was spent here, and a final blood test was taken. Our manager from Proyecto Taguá, Jakob Unger, accompanied the animals during their foreign quarantine and also monitored their health.

We asked the Phoenix Zoo staff to be the host and breeding site for this species in North America, because their ecology and weather most nearly simulates that found on the Chaco. Their willingness to support this project was a tremendous boost, and all 10 animals received at Phoenix are adapting well to their new home.


Werner P. Heuschele, D.V.M., Ph.D.

In the near future, we look forward to receiving *taguá* offspring from the Phoenix Zoo at the San Diego Wild Animal Park. This will establish a needed second breeding colony of this highly endangered species. It will also provide access to CRES scientists for the study of the genetics, reproductive physiology, and diseases of this rare and interesting species from the Gran Chaco.

—Werner P. Heuschele, D.V.M., Ph.D.
Director of CRES



Dennis Meritt, Ph.D.

These crates carried the peccaries safely from Paraguay to Poland, on to New York, and finally to Phoenix, Arizona.

Cytogenetics

The ability of the Zoological Society's bird departments at the Zoo and the Wild Animal Park to effectively and efficiently manage their breeding programs depends, in part, on early identification of appropriate pairs for mating. In many avian species, however, gender identification cannot be determined using morphological (physical) characteristics. Although there are numerous methods available for sex determination, each has its drawbacks. Surgical laparoscopy, an invasive technique, requires adult animals for visual identification of the fully developed gonadal organs. Likewise, hormonal assays require adult animals because circulating levels of hormones produced by mature gonads are measured. Blood culture protocols and/or molecular genetic techniques that have been optimized for some species have been shown not to work in other species. The CRES cytogenetics laboratory has been using an alternative cell culture method, using cells retrieved from the pulp at the base of growing feathers. This noninvasive method can be used on juvenile animals as well as adults, and it is a relatively rapid test. This technique is being refined for growing and harvesting cells from very small samples of rapidly dividing cells, which will enable us to use feather samples from small birds.



Painted storks are among the bird species that benefit from noninvasive gender identification methods developed at CRES.

CRES Grants

The Center for Reproduction of Endangered Species is grateful to the following for their support of imperiled wildlife:

*The **John and Beverly Stauffer Foundation** has made a grant to the CRES genetics division for the purchase of a DNA speedvac concentrator. The speedvac will be used to evaporate and concentrate samples prior to DNA sequencing, with greater speed and efficiency than was possible in the past.*

*The **J.C. Downing Foundation** has made an equipment grant to the CRES genetics division for the purchase of a microcentrifuge. This vital equipment will be used to spin down samples for genetic analysis of giant pandas, gorillas, California condors, and other endangered species.*

Paws, Claws, and a Conservation Cause!

Paws and claws make up the logo for the new, promising WILD BEASTS licensing property geared towards the outgoing and adventurous boys' market.

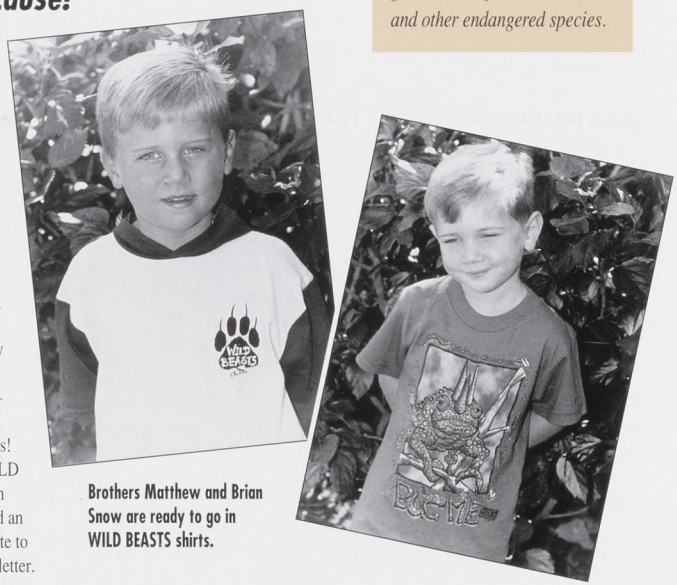
Gotschalk's Graphics, a San Diego-based firm specializing in products that promote environmental awareness, created and generously donated the WILD BEASTS logo to the Zoological Society's Center for Reproduction of Endangered Species (CRES). Graphic artist Jill Gotschalk, who has won awards for her work with zoos, museums, and national parks, believes WILD BEASTS will be a hot property. Her beautiful work is featured on many different items in the Society's gift shops.

Currently, WILD BEASTS is off to a roaring start with a right-on-target boys' clothing line made by McKibben Screen Printing and Distribution Incorporated, based in Santa Ana, California.



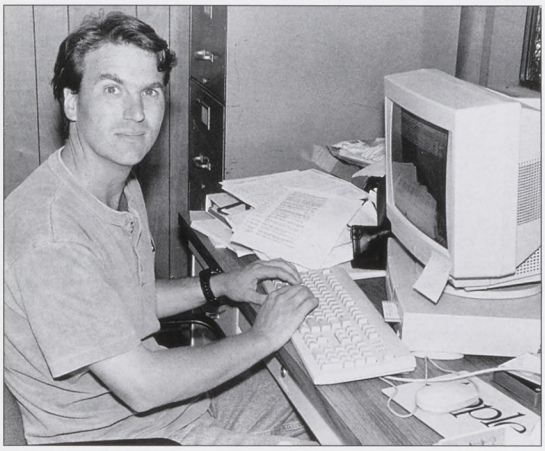
McKibben's wild screens include: speeding cheetahs, big apes, creepy bugs, charging rhinos, and other furry, friendly beasts in truly unique and wonderfully colorful designs—purrrfect for playfully wild and active animal-loving youngsters!

Each garment features a WILD BEASTS decal hangtag with an educational CRES message and an address where children can write to and receive a *CRESkids*™ newsletter.



Brothers Matthew and Brian Snow are ready to go in WILD BEASTS shirts.

A First for CRES: The J. Dallas Clark Postdoctoral Fellow in Behavior

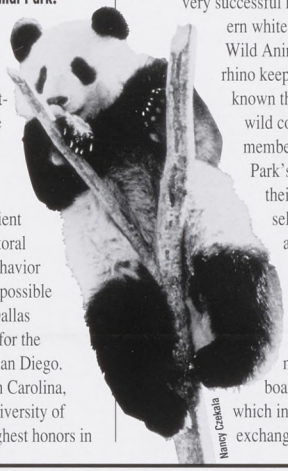


Behaviorist Dr. Ron Swaisgood, the first J. Dallas Clark Postdoctoral Fellow at CRES, is working on olfactory communication between rhinos at the Wild Animal Park.

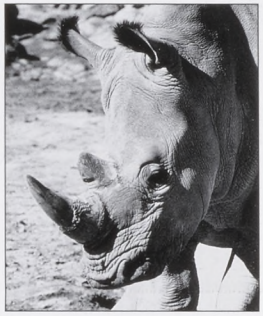
What do giant pandas and rhinoceroses have in common? Both are species that are best described as having a solitary mode of existence in the wild. It is usually safe to predict that with solitariness goes a dependence on the olfactory sense (smell) for communication between animals. These taxa do not breed particularly well in captivity, and it is possible that a better understanding of their communication system would lead to improved reproduction. In the behavior division at CRES, we have had a long involvement with this issue in studying cheetahs, and we have eagerly awaited the opportunity to extend our investigations to species in need of help. Our prospects for doing so have brightened considerably since Dr. Ron Swaisgood joined our program on May 1, 1995.

Ron is the first recipient of an endowed postdoctoral fellowship in animal behavior studies at CRES, made possible by a donation from J. Dallas Clark, trustee emeritus for the Zoological Society of San Diego. Ron is a native of North Carolina, graduating from the University of North Carolina with highest honors in 1985. He then enrolled in the graduate program in animal behavior at the University of California, Davis, from which he received his Ph.D. in 1994. For his dissertation, Ron studied predator-prey relationships between rattlesnakes and ground squirrels at a field site near Walnut Creek, California. Along the way, he spent two years working as a behavioral technician on Morgan Island, off the coast of South Carolina, helping take care of a large colony of free-ranging rhesus monkeys.

After a careful search by the CRES committee, Ron was selected from more than 50 candidates who responded to our postdoctoral ad. On arriving in San Diego, he was immediately put to work studying the behavior of our very successful herd of southern white rhinos at the Wild Animal Park. The rhino keepers have long known that, like their wild counterparts, members of the Park's herd deposit their feces in select locations; and Ron's work indicates these deposits are like community bulletin boards through which individuals exchange information.



Nancy Czekala



Although they go about it in a different way, giant pandas also use olfaction to send and receive messages about one another. In this case, exudate from a large scent gland is used to mark objects such as the trunks of trees or rocks, which are then investigated by visiting pandas. When the opportunity arose for us to begin behavioral studies on captive pandas at China's Wolong Reserve, Ron was able to spend 10 weeks at the Reserve observing panda scent-marking behavior. This initial study will be helpful as we implement studies of scent marking on the pair of pandas now in San Diego.

In addition to being a first-rate scholar, Ron is very personable, and we are pleased to have him at CRES as the first J. Dallas Clark Postdoctoral Fellow in Behavior.

—Donald G. Lindburg, Ph.D.
Head of Behavior Division/CRES

Matching Gifts Benefit CRES

The important work done by the researchers at CRES is made possible in a large part through the generous support of our dedicated friends. Many companies will match the gifts given by their employees, and often their retirees, to further the important work of our scientists at CRES. On behalf of endangered species preservation, we encourage you to ask your employer if your gift qualifies for a match under their guidelines. If so, we invite you to send your donation, along with your company's matching gift form, to: The Zoological Society of San Diego—Matching Gifts for CRES, P.O. Box 271, San Diego, California, 92112. It is only through your support and programs like matching gifts that we can guarantee the future of the biological rescue mission under way at CRES. For more information on the Matching Gifts Program, please contact Laurie Chadwick in the development office at (619) 685-3219.



Adopt the Future for Our Giant Pandas

Welcome the giant pandas back to the San Diego Zoo! To honor their arrival and remind us of their fight for survival, we are privileged to present giant pandas as our **HOLIDAY ADOPTION**. With every adoption, not only will you be receiving a cuddly, plush panda and a gift package, you will also be contributing to the future of these animals. Your generous adoption will help the dedicated researchers at CRES to continue their studies of giant panda behavior, both in zoos and in the wild.

With your adoption of $99, you can choose ***PACKAGE 1***:

- **A plush 10-inch giant panda with enameled CRES panda pin**
- **A personalized certificate of adoption**
- **A subscription to *CRES Report***
- **A personalized gift card to announce your adoption**

AND

- **Two complimentary guest passes to the San Diego Zoo or the San Diego Wild Animal Park.**

With your adoption of $99, you can choose ***PACKAGE 2***:

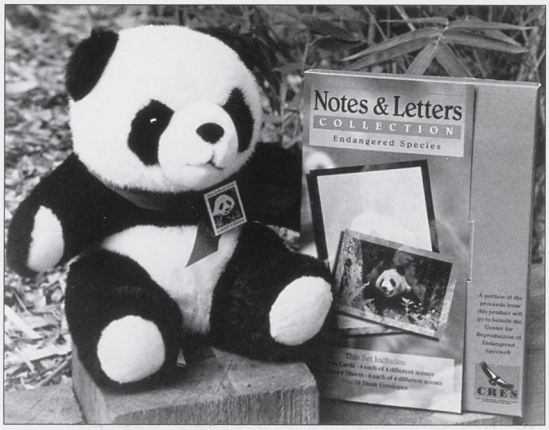
- **A plush 10-inch giant panda with enameled CRES panda pin**
- **A personalized certificate of adoption**
- **A subscription to *CRES Report***
- **A personalized gift card to announce your adoption**

AND

- **Endangered Species Notes & Letters Collection with exclusive boxed CRES pen.**

Support CRES and the giant pandas with a holiday gift that will keep the future alive.





ANIMAL ADOPTION APPLICATION

❑ **YES,** I want to adopt a giant panda as a gift for:

Choose: ❑ *PACKAGE 1* or ❑ *PACKAGE 2*

Name(s) _____

Address _____

City _____ State____ Zip_____

Message for gift card _____

_____

Additional giant panda adoption:

Choose: ❑ *PACKAGE 1* or ❑ *PACKAGE 2*

Name(s) _____

Address _____

City _____ State____ Zip_____

Message for gift card _____

_____

Please charge my:

❑ MasterCard® ❑ VISA® ❑ Discover® ❑ American Express®

Card # _____ Exp. Date _____

Signature _____

OR, please make checks payable to the Zoological Society of San Diego and mail to: **The Zoological Society of San Diego**, Adopt-An-Animal Program, P.O. Box 271, San Diego, CA 92112.

OR, you may charge your adoption by telephone: call (619) 557-3974 between 8 A.M. and 4 P.M., Monday through Friday.

Orders must reach the San Diego Zoo by December 13 to ensure delivery by Christmas.

(AHCR6)

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CRES REPORT
CENTER FOR REPRODUCTION OF ENDANGERED SPECIES

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CRES "Wish List"

Researchers at CRES have been working for more than 20 years to ensure the survival of endangered species. With remarkable achievements to their credit, there are still many current CRES conservation projects with special requirements. Financial assistance is needed for the acquisition of specialized equipment and supplies required by CRES staff, which include:

- Teaching head for lab microscope for pathology, $2,675.
  Multiple eyepiece viewers permit two or more persons to view slide at same time.
- Ultralow freezer with inventory rack system for veterinary services and pathology, $10,850.
  To be used for storage of biologic specimens.
- Biological safety hood Class II/B3, Forma Scientific, for infectious diseases, $7,315.
  Will provide necessary safe workstation for handling live infectious agents.
- Nikon Nimarski optics microscope accessory (nosepiece, prism, and optics), $10,000.
  This is needed for embryology studies by the endocrinology division.
- Beckman high-speed refrigerated centrifuge, $38,300.
  This will replace a 20-year-old centrifuge that has become expensive to service and maintain and which is no longer adequate for work requirements of the infectious diseases division.
- Power Macintosh 9500 Computer with monitor and keyboard, $5,442.
  The reproductive physiology division has only one computer for its staff, and this addition is needed to enter and analyze data and write documents.
- Cytocentrifuge, Cytospin 3, $5,351.
  This prepares body fluid samples from clinically ill animals for cytologic examination. This method gives excellent cytologic detail and allows for better diagnostic potential.
- Liquid nitrogen freezer, $7,385.
  The reproductive physiology division continuously stores germ plasm (sperm and ova) from valuable specimens. The available freezer space is nearly depleted.



CRES REPORT
CENTER FOR REPRODUCTION OF ENDANGERED SPECIES

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SAN DIEGO ZOO
SAN DIEGO WILD ANIMAL PARK

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